

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of bone cement preparation from a polymeric powder and a liquid component, comprising a polymerisable monomer or comonomer, by action of a catalytic system, whereby particles of said powder component are packed in a powder container (7;35) with an inlet port (8) and an outlet port (9) and the liquid component is held in a liquid container (11), comprising the steps of:

- A) completely filling said powder container (7;35) with said polymeric powder;
- B) connecting said liquid container (11) to said inlet port (8);
- C) connecting a vacuum source (10) to said outlet port (9); and,
- D) completely flooding a void space between said particles of said powder component with said liquid component, said liquid component flowing from said inlet port (8) in toward said outlet port (9) by the action of the vacuum source (10).

2. (Previously Amended) A method of bone cement preparation from a polymeric powder and a liquid component, comprising a polymerisable monomer or comonomer, by action of a catalytic system, whereby particles of said powder component are packed in a powder container (7;35) with an inlet port (8) and an

outlet port (9) and the liquid component is held in a liquid container (11), comprising the steps of:

A) packing said powder in said powder container (7;35) to a fractional porosity of 0.30 to 0.43;

B) connecting the liquid container (11) to said inlet port (8);

C) connecting a vacuum source (10) to said outlet port (9); and,

D) flooding the void space between said particles of said powder component by said liquid component, said liquid component flowing from said inlet port (8) toward said outlet port (9) by the action of the vacuum source (10).

3. (Currently Amended) The method according to claim 1, wherein the catalytic system comprises benzoyl peroxide, ~~said benzoyl peroxide being preferably contained within said particles.~~

4. (Currently Amended) The method according to claim 1, wherein said upstream inlet port (8) and said downstream outlet port (9) of said container (7) allow air and liquid to pass ~~thereby~~ therethrough, but not powder.

5. (Previously Amended) The method according to claim 1, wherein said powder container (7;35) is inflexible and in the form of a syringe (13).

6. (Previously Amended) The method according to claim 1, wherein said powder in said powder containing compartment (35) is packed to a fractional porosity of 0.34 to 0.38.

7. (Previously Amended) The method according to claim 6, wherein said powder in said powder containing compartment (35) is packed to a fractional porosity of 0.35 to 0.37.

8. (Previously Amended) The method according to claim 1, wherein said powder component is flooded by said liquid component in 15 to 60 seconds.

9. (Previously Amended) The method according to claim 8, wherein said powder component is flooded by said liquid component in 25 to 35 seconds.

10. (Previously Amended) The method according to claim 1, wherein the flow of said liquid component is controlled by a valve (12) interposed between said liquid container (11) and said inlet port (8).

11. (Previously Amended) The method according to claim 1, wherein flooding of said powder component by said liquid component is followed by swelling, draining of excess liquid component and extrusion of the mixed components.

12. (Previously Amended) The method according to claim 11, wherein said draining of excess liquid is effected by a piston (39) contained in a vacuum pump (37).

13. (Previously Amended) The method according to claim 1, wherein said inlet port (8) comprises a mesh (19) which prevents passage of said powder particles, but allows passage of said liquid.

14. (Previously Amended) The method according to claim 1, wherein said outlet port (9) comprises a narrow gap (25) that subsequently blocks passage of said powder particles, but allows for passage of air and said liquid.

15. (Previously Amended) The method according to claim 14, wherein the narrow gap (25) is smaller than 50 μ .

16. (Previously Amended) The method according to claim 14, wherein the narrow gap (25) is smaller than 3 times an average diameter of said particles of said powder component.

17. (Previously Amended) The method according to claim 1, wherein said polymerisable monomer or comonomer comprises methyl-methacrylate, ethyl-methacrylate or butyl-methacrylate or mixtures thereof.

18. (Previously Amended) The method according to claim 1, wherein said vacuum source (10) generates a vacuum in the range of 10 to 200 mbar.

19. (Previously Amended) The method according to claim 18, wherein the vacuum source (10) generates a vacuum in the range of 50 to 100 mbar.

20. (Previously Amended) A bone cement mixture obtained by the method according to claim 1.

21. (Currently Amended) An apparatus for preparing bone cement performing the method according to claim 1, said apparatus comprising:

A) a powder container (7) with an inlet port (8) and an outlet port (9), said powder container (7;35) being completely filled with a polymeric powder;

B) a liquid container (11) containing a liquid component comprising a polymerisable monomer or comonomer; whereby

C) said liquid container (11) is connectable to said inlet port (8);

D) said outlet port (9) is connectable to a vacuum source (10); and;

E) a void space between said particles of said powder component is floodable by said liquid component through said inlet port (8) in the direction of said outlet port (9) by the action of a vacuum source (10).

22. (Currently Amended) An apparatus for preparing bone cement performing the method according to claim 1, said apparatus comprising:

A) a powder container (7) with an inlet port (8) and an outlet port (9), said powder container (7;35) containing a polymeric powder, whereby said powder in said powder container (7;35) is packed to a fractional porosity of 0.30 to 0.43;

B) a liquid container (11) containing a liquid component comprising a polymerisable monomer or comonomer; whereby

C) said liquid container (11) is connectable to said inlet port (8);

D) said outlet port (9) is connectable to a vacuum source (10); and;

E) wherein a void space between said particles of said powder component is floodable by said liquid component through said inlet port (8) in the direction of said

outlet port (9) by the action of the vacuum source (10).

23. (Previously Amended) The apparatus according to claim 21, wherein it comprises the vacuum source (10).

24. (Previously Amended) Apparatus according to claim 23, wherein said vacuum source (10) is an evacuated can (44).

25. (Previously Amended), Apparatus according to claim 23, wherein said vacuum source (10) is an evacuated piston (45).